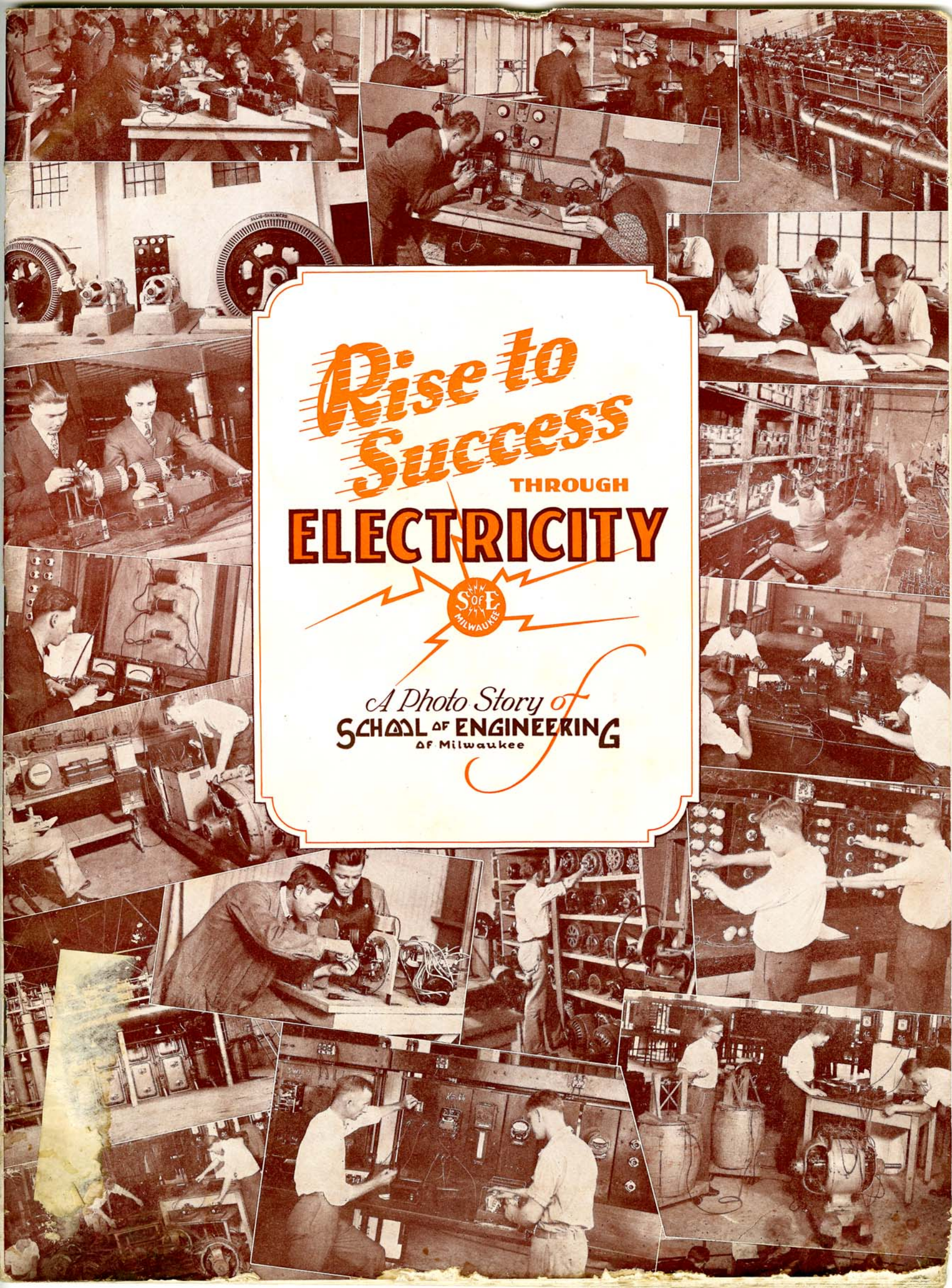


Rise to Success THROUGH ELECTRICITY

A Photo Story of

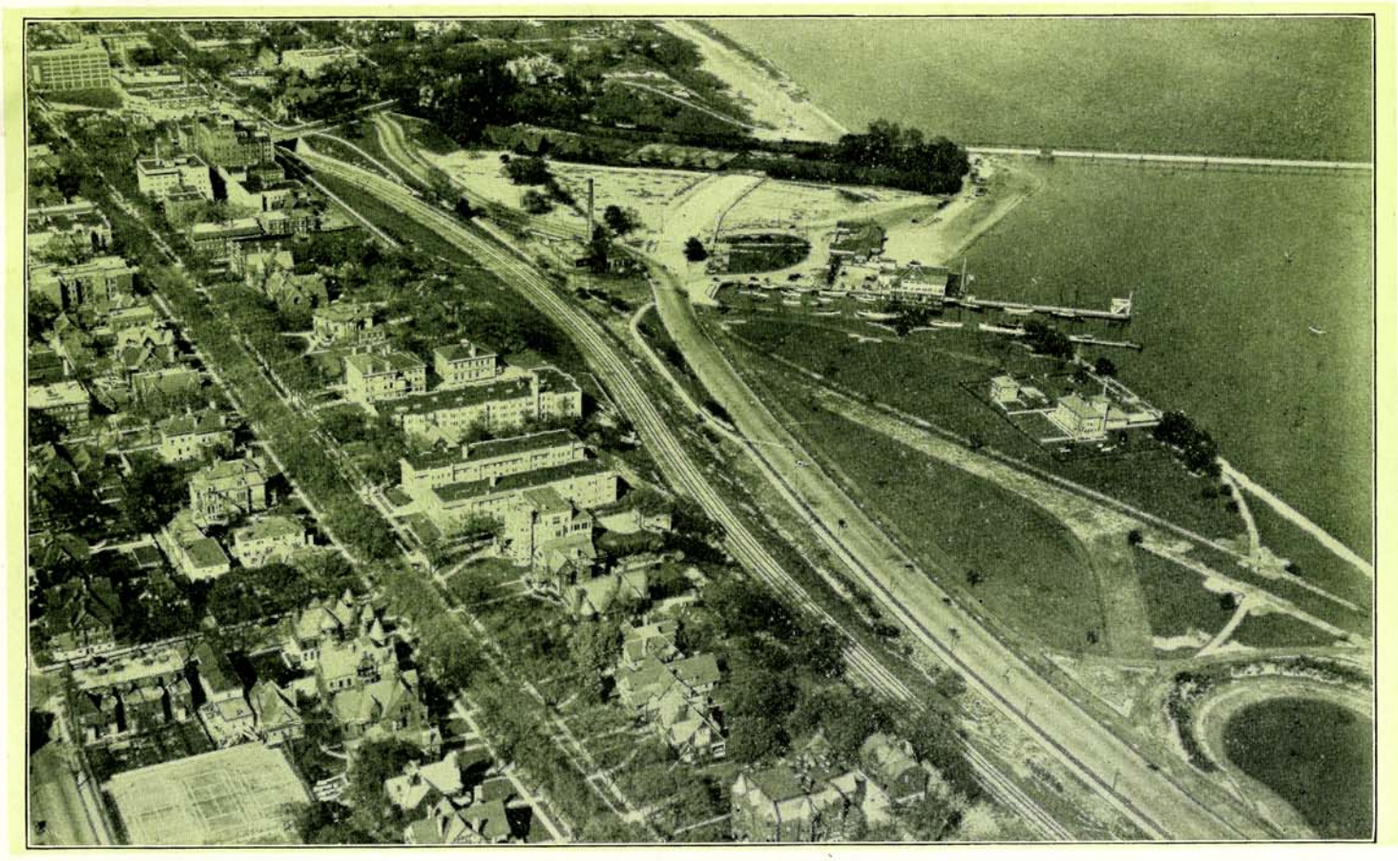
SCHOOL OF ENGINEERING
OF Milwaukee

Dedicated to Oscar Werwath on the Anniversary of his Twenty-fifth Year as an Electrical Educator.

THE School of Engineering of Milwaukee was founded in 1903 by Oscar Werwath, E. E., who holds the office of president of the institution.

Mr. Werwath began teaching electricity in 1903 and since then has taught 23,000 men who now hold electrical positions all over the United States and in many parts of the world.

This achievement is an outstanding contribution to the progress of the Electrical Industries and marks Mr. Werwath as one of America's foremost educators in Practical Electricity.



Airplane View Milwaukee Harbor and Upper East Side.

An Illustrated Trip
Through School of Engineering

Harry Davis sighed happily as the train came to a stop. "Well, here we are, Jack," he remarked to his comrade, Jack Williams, "and I've a feeling that we're going to like Milwaukee." They elbowed their way through the crowds in the Northwestern Depot and came out into the sunny street which runs northward along the lake. "This sure is a beautiful place," Harry continued, catching his first glimpse of Juneau Park which overlooks the broad expanse of Lake Michigan.

Jack nodded. "That water makes me want to take a swim right now. But let's go straight to the School first and then, later, we can see more of the sights.

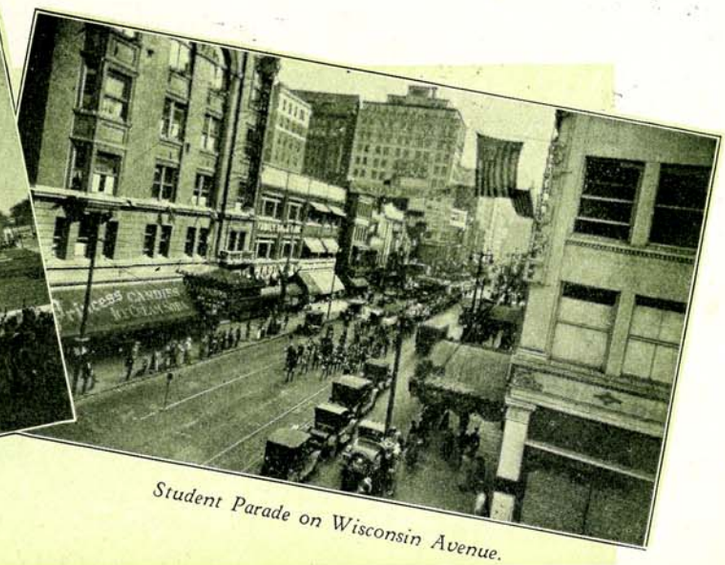
Accordingly the pair struck off for the School of Engineering less than a half dozen blocks away. They had come to Milwaukee purposely to go through the School and inspect its facilities because both were interested in taking up an Electrical Course.

"Come on, Harry, let's go," said Jack. "According to the directions given to us we must walk three blocks westward to Jackson Street."

And while the two chums continue their walk down East Wisconsin Avenue, let us explain the purpose of their visit to Milwaukee.

Their home was in Cortland, Nebraska. They had heard of the School of Engineering of Milwaukee through one of its graduates who had recommended it highly. Since both boys were interested in electricity, they had arranged a trip to Milwaukee to see the school and to learn more of it.

School of Engineering Freshmen Parade.



Student Parade on Wisconsin Avenue.

The New Home of S. of E. (Courthouse Park in Foreground)

"This must be the corner," said Harry as he read the sign at the intersection of the streets. "It's Jackson Street, but I can't see the school. Can you?" They paused a moment and gazed about. Finally Jack suddenly pointed down the street and exclaimed:

"Why, Harry, that must be the school! It's only about two blocks away. Don't you see those big radio towers? It's a wonder we didn't see them before!"

"You'll remember," he went on to say, "that the school's station is WISN. We've heard WISN several times. It's the station which puts on those fine organ recitals."

They Meet the President

A moment later they had reached the school and were seated in the main office waiting for an interview with President Oscar Werwath. Mr. Werwath, upon being informed of their arrival, immediately received the visitors in his private office.

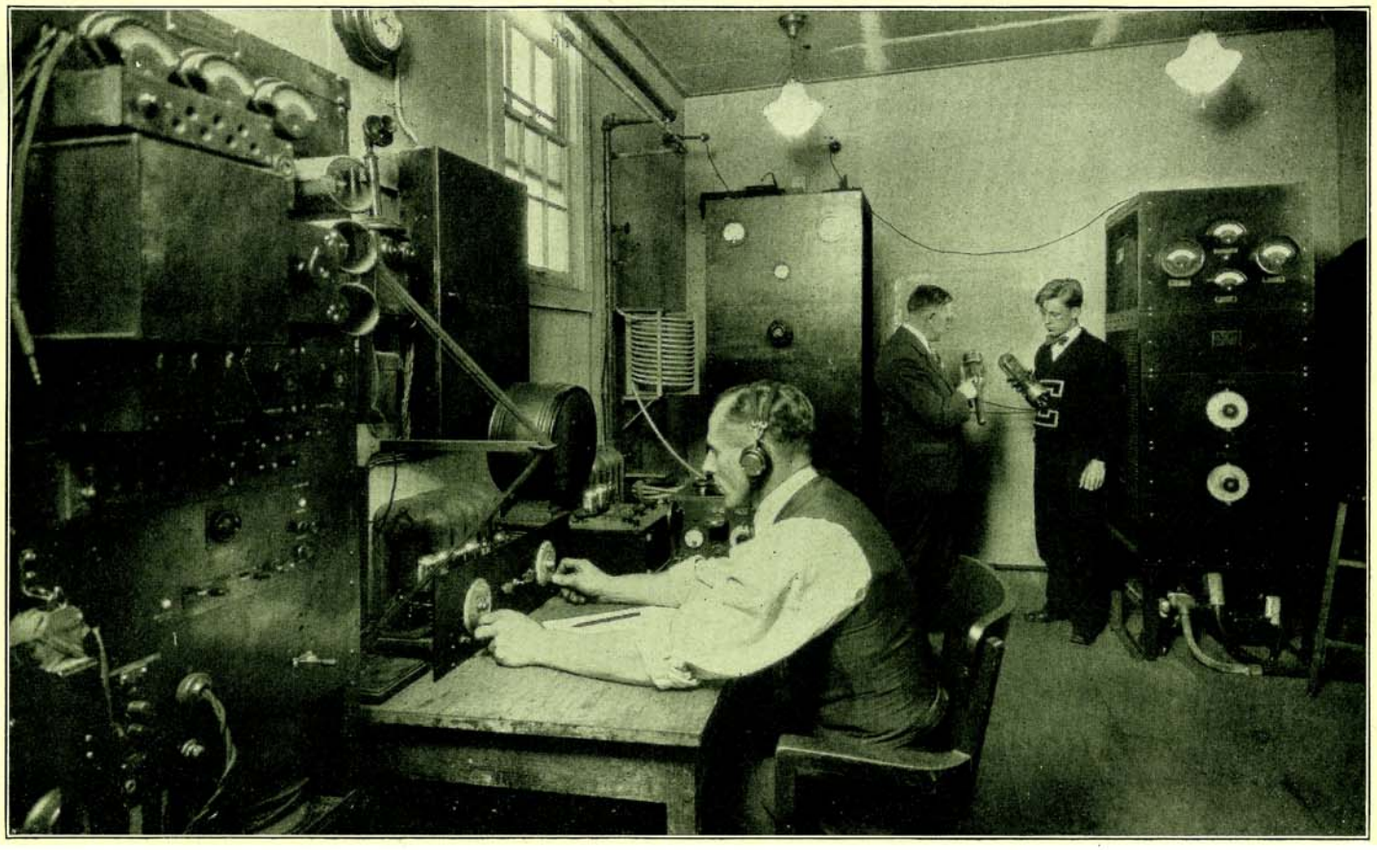
"Good morning," he said pleasantly. "What can I do for you? Be seated, please."

"My name is Davis," said Harry, "and this is my friend Jack Williams. We've had some correspondence with your school and have come all the way from Cortland, Nebraska, to see it and to get further information."

"Oh, yes," said Mr. Werwath, "I have a memorandum of your names here on my desk. I expected that you would arrive today. Now I suppose that you will want to see the school?"

"Yes, we're very anxious to see the shops and laboratories described in the catalogue," replied Jack.

What Harry and Jack Saw.



The Transmitting Room of Station WISN.

"We've been very much interested in radio," said Harry. "One of the first distant stations we were able to get was WISN."

"Oh, have you heard WISN?" said Mr. Hartman. "I suppose you will want to see the station. We will visit it as soon as we have finished here.

"These students are experimenting with various circuits in which they are investigating the directional effect of the antenna," Mr. Hartman explained, "while the students in this group are determining the characteristics of various types of radio tubes."

The visitors were then guided to the transmitting room of WISN.

"We will inspect the power supply first," Mr. Hartman went on. "The power is derived from these huge sets of storage batteries.

"There are two batteries, each having 800 cells in series Either battery is capable of furnishing a plate potential of 1,600 volts. One battery is in use at any given time. The other is held fully charged as a reserve in the case of emergency."

"What type of transmitting equipment do you have?" inquired Harry, who was very much interested in radio.

"The amplifying equipment is a three stage impedance coupled circuit," replied Mr. Hartman. "The station is rated at 250 watts," he added as they inspected the transmitting panels. "You will note that four tubes are used two of which

A Group of WISN Artists.

At the Microphone.

A View of the Chemical Laboratory.

are used as oscillators and the other pair as modulators. The station is kept on its assigned frequency of 1110 kilocycles by a Piezo crystal oscillator."

Visitors Inspect Drafting Room

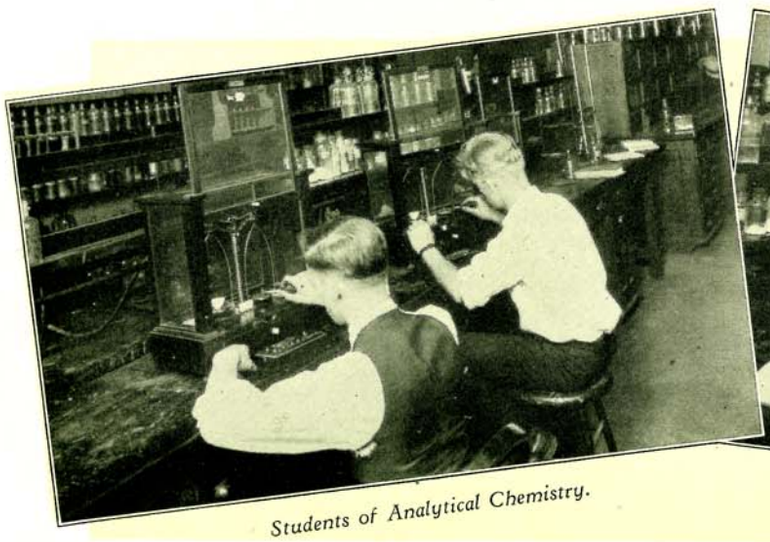
On their way downstairs they stopped to see the chemical laboratory and well-lighted drafting room. There Mr. Hartman exhibited some of the excellent drawings made by students. These drawings, he explained, involved all sorts of mechanical devices such as gears, machine parts and complete assemblies. Others dealt with the complete plans for sub-stations and power plants.

Finally they reached Mr. Hartman's office where the visitors were glad to find comfortable chairs after their long walk through the shops and laboratories.

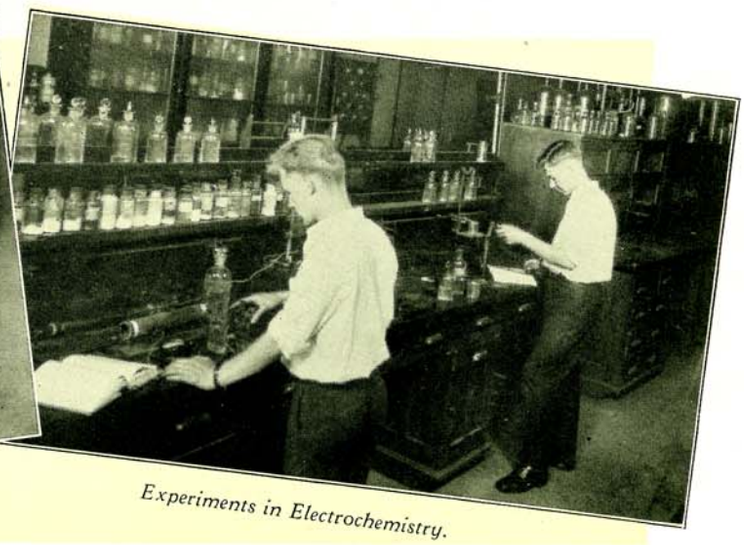
"Now I'll be glad to give you further information regarding the courses we offer," said Mr. Hartman when they had been seated. "I believe that you are both high school graduates. Am I right?"

"Yes," answered Harry. "We graduated last June, and both of us thought of taking the Commercial Electrical Engineering Course. We have brought a statement of our high school credits with us."

"Very fine," responded Mr. Hartman. "It is an excellent course and one of the most popular we offer. Our trip through the laboratories has shown you how very extensive the courses in electricity are. As you have read in the catalog, the course also includes such commercial subjects as merchandising, salesmanship, and advertising. In addition to these subjects, mathematics, drafting, and design are taught."



Students of Analytical Chemistry.



Experiments in Electrochemistry.

Some of the Artists Participating in the Seven Hour Program at the Opening of our New Station.

WISN—The School of Engineering Station

TUNE in on WISN, the School of Engineering station. Radio fans will find WISN (formerly WSOE) on the air every afternoon and evening, broadcasting a well selected program. There is a choice of classical and popular music and other excellent features. The organ recitals, which are a WISN feature, have been enthusiastically received by a vast radio audience, A typical daily program appears on this page.

S. OF E. A RADIO PIONEER—

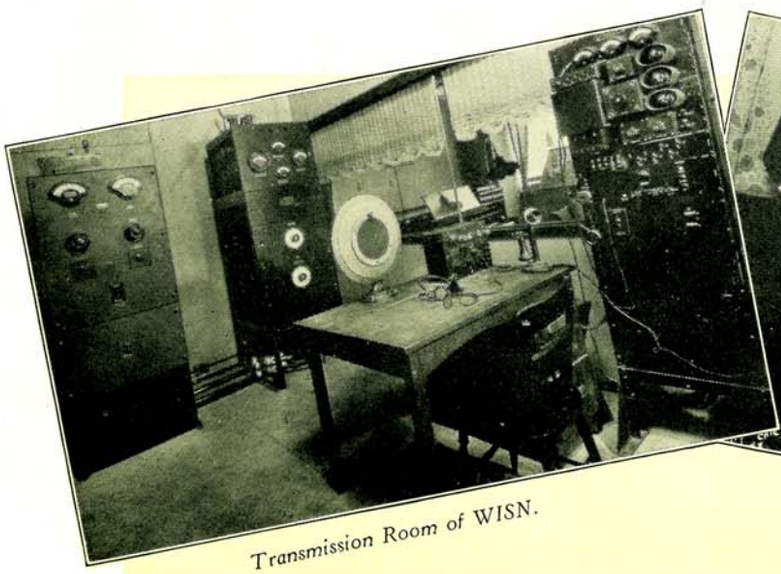
The School of Engineering of Milwaukee is a pioneer in wireless and radio communication. In the early days of wireless it operated one of the first large spark stations in the State of Wisconsin. The school consistently kept pace with the progress of this new science and in the year 1922, its first radio station went on the air under the call letters of WIAO.

The present station, WISN, is rated at 250 watts and uses standard Western Electric Company transmitting equipment built in three panels, (A), the power panel, on which are located metering and control apparatus for the high and low voltage supply to the power tubes; (B), the speech input panel, containing a three-stage impedance coupled amplifier, volume control, signal panel and switching controls, and (C), the transmitter panels, which contain four power tubes, two tubes acting as oscillators and two as modulators, a 50-watt power amplifier tube and auxiliary apparatus.

S. of E. students are extremely fortunate in having both station WISN and the amateur station 9SO at their disposal.

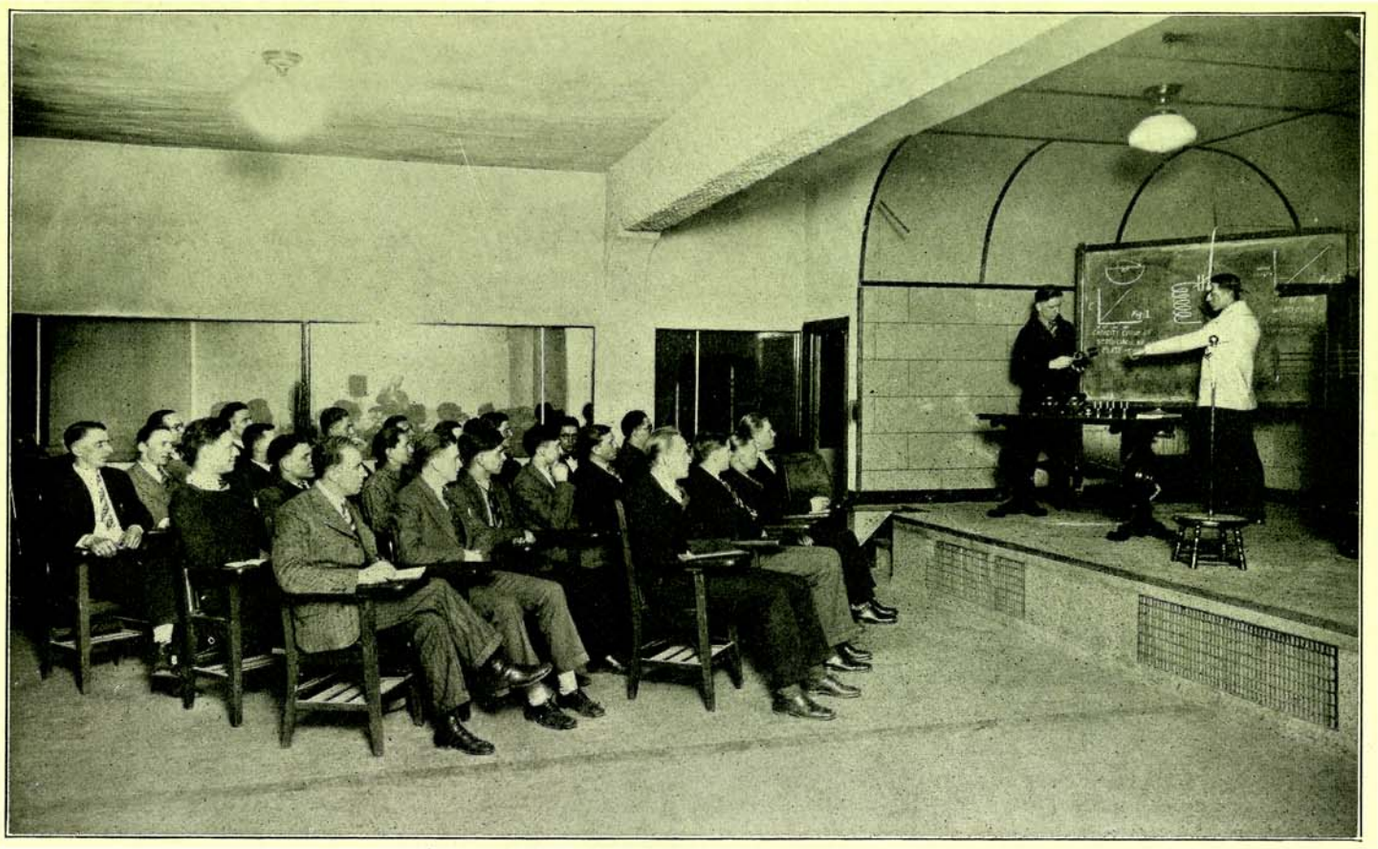
The following is a typical WISN daily program as recently broadcast:

1:00- 2:00—Emmy Hoyer and String Trio from Hotel Pfister.
Studio Artists.
2:00- 2:15—News Flashes.
2:15- 3:00—Request organ program by Avelyn M. Kerr.
3:00- 3:30—Musical Melange.
5:00- 5:30—Peter Rabbit schedule (children's hour).
5:30- 6:00—Classical organ music.
6:00- 6:30—Hotel Pfister String Trio.
6:30- 7:00—Dinner Music.
8:00- 9:00—Studio Program.
9:00-10:00—Silver Slipper Night Club dance program and studio artists; Johnny Black, entertainers.
10:00-11:00—Special organ program by Avelyn M. Kerr.



Transmission Room of WISN.

A Group of WISN Artsits.



A Radio Club Meeting.

Radio Communication Promoted by Club

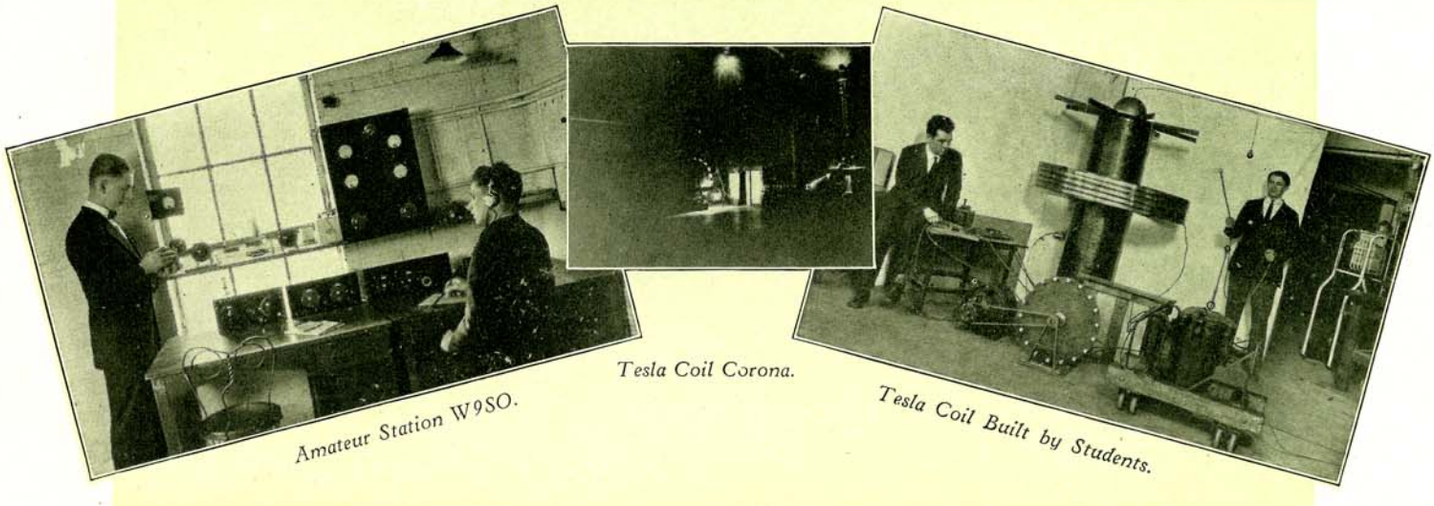
THE Radio Club, composed of School of Engineering students, is very active in school affairs. The club was organized by those students pursuing the Radio course for the purpose of promoting the study of code and furthering their knowledge of the technique of radio communication. Regular meetings of the organization are held during which technical papers by the students are read and discussed. Code practice meetings of the club are also held from time to time. Many of the members thus become very proficient in the transmission and reception of code messages.

The Radio Club also operates amateur station W9SO. Station W9SO is rated at 50 watts and can be operated at wave lengths of 20 and 40 meters. The student operators have, in the past few months, communicated with foreign amateurs in Australia, Africa, New Zealand, Alaska and other countries. The station affords the School of Engineering radio fans an ample opportunity for code practice.

Station W9SO has at present about 500 confirmation cards showing that it has held two-way communication with as many amateur stations. The station has its own room on the roof of the school building where the radio enthusiasts spend much of their spare time. Any student who is interested in radio will be welcomed by the Club as a member and can participate in its many activities.

STUDENTS BUILD LARGE TESLA COIL

The 1,000,000 volt Tesla coil shown on this page was built by the School of Engineering students for the purpose of demonstrating the effects of "miniature lightning." The coil will produce a 4 foot spark capable of demolishing a model village which was constructed to show the effects of lightning discharges. Many interesting experiments have been performed with this apparatus and it has proven a valuable aid in demonstrating the cause and effect of "flashovers" in high tension equipment.



Amateur Station W9SO. *Tesla Coil Corona.* *Tesla Coil Built by Students.*

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